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The Roots of Modern Biochemistry
Walter de Gruyter, Berlin, New York 1988. 994pp.

This book, based on the scientific life of Fritz Lipmann and his profound effects on the ongoing progress of metabolic biochemistry, is almost more a romance than a summary of the discovery and expansion of the secrets of living cells. It will be read by contemporaries and near-contemporaries with very strong feelings of nostalgia and warmth, and by younger members of the biological family as a dazzling collection of reminiscences and scientific descriptions by the most highly respected and productive biomedical scientists of this century.

I must admit to belonging to the first category -- that of a contemporary -- although just barely so. I was a graduate student in biochemistry at Harvard Medical School when Fritz Lipmann appeared in the Department of Surgery at Massachusetts General Hospital as a sort of super postdoc. Fritz was awarded the occasional honor (?) of lecturing to both graduate students and medical students at the medical school, and I was fortunate to attend a number of these presentations. As is described in the book, Fritz Lipmann appeared in a quiet, diffident way, perhaps somewhat shyly, and launched into a discussion of his subject which, at the time, was heavily flavored with the ongoing discoveries and developments related to acetylphosphate and subsequently to acetyl CoA. As the lecture hour went by, he tended to become bemused and seemed to drift off into a world of internal thoughts, speaking with a softer and softer voice and, as I remember, looking for the most part at the ceiling.

His soft voice and diffident manner never really changed throughout his lifetime but it became apparent to everyone who got to know him that behind that quiet manner was a seething whirlpool of creativity and constant puzzling about how Nature works.

Lippmann had the great fortune of working in an area of science that he more or less developed by himself, and that attracted a very large number of talented colleagues. During my years at Harvard Medical School, I recall the outstanding work being carried out by the late Nate Kaplan and by David Novelli in the program that was proceeding in Lipmann's laboratory. Closer to home, I became acquainted with Earl Stadtman, another of Lipmann's stars who, together with Horace Barker in California, had done elegant work on the transacetylase system. In Stadtman's case, I was able to observe at first hand the growth and evolution of a Lipmann-inspired product. Earl moved to the National Institutes of Health with me in 1950, and his work continued at an extremely high level with constant overtones of the master's touch. I am sure that Fritz Lipmann must have had great pleasure from Earl's discovery of the adenylation reaction in the control of glutamine synthetase activity.

Most people first think of Fritz Lipmann in terms of the so-called "squiggle." This term which could be equated with the concept of a high-energy linkage, in general, has survived up to the present. It grows, of course, out of the early findings and concepts of Lipmann and of Herman Kalckar at about the same time, and the transfer and utilization of the energy in ATP

to other systems involving high-energy chemistry. This book, containing some ninety short eulogies blended with novel biochemical findings, has the squiggle as more or less the central theme. One need not read through these ninety contributions in a sequential manner. Each one stands alone as a personal appreciation, but each one also contains a short description of some fundamental aspect of cell function. Somehow or other, the blend of high-level science with the recollection of an outstanding person make each of the contributions interesting. The book will make fascinating reading not only for elder statesmen in the field but for graduate students and younger members of the profession who can hardly help but be fascinated by the scientific and human network that this great scientist constructed. I would like to recommend this volume of The Roots of Modern Biochemistry as a book that everyone in biology and its various branches should have on the bookshelf. It can be opened at almost any page with valuable and pleasurable exposure to fundamental biological research.